

VIII. CORRIDOR'S AFFECTED ENVIRONMENT

A. Physical Resources

Geology/Topography

Beginning about 2 million years ago the climate began to periodically cool and warm. During the colder periods, averaging 100,000 years each, ice sheets as much as three miles high at their centers formed in the Hudson Bay region of Arctic Canada and spread outward across northern North America, including Wisconsin. During warmer periods, averaging 10,000 years in duration, most of the ice sheets melted away. This cyclical process occurred as many as two dozen times during the 2 million years of the Pleistocene Epoch. It is likely that portions of Wisconsin were blanketed many times by these ice sheets, but evidence of these events is mostly buried beneath the deposits left by the most recent glaciation.

The several glacial advances of the late Pleistocene have left distinct and prominent features in Portage and Waupaca Counties, including moraines, kames, kettle depressions, tunnel channels, drumlins, waterlaid sediments and drainage channels. The late Pleistocene glaciers entered Waupaca and Portage Counties from the east, sweeping entirely across Waupaca County each time and extending westward about halfway across Portage County on several occasions. The furthest of these advances is marked by the Arnott Moraine a few miles east of Stevens Point. The highly eroded character of this moraine seems to suggest that it was formed more than 50,000 years ago and possibly as much as several hundred thousand years ago.

The landscape of the eastern third of Portage County and all of Waupaca County is dominated by features formed by several glacial advances during the late Wisconsin Glaciation. The Wisconsin Glaciation began about 75,000 years ago, but the last phase of this glaciation, beginning about 25,000 years ago, created the landscape we live in today. Several distinct Late Wisconsin glacial advances are marked by the singular Hancock and Almond Moraines in Portage County to the east of the Arnott Moraine. The Almond Moraine correlates with the outermost Johnstown Moraine of southern Wisconsin marking the greatest extent of the Green Bay Lobe of the Wisconsin Ice Sheet about 16,000 years ago.

About 13-14,000 years ago the glacier melted back from the Almond Moraine, paused and then advanced a number of times into the eastern edge of Portage County, forming a band of narrow moraines called the Elderon Moraines. These moraines parallel on both sides the border of Portage and Waupaca Counties. The Elderon Moraines are broken at regular intervals by channels cut by westward flowing glacial meltwater torrents, giving a strong east-west orientation to both the hills and the valleys of this landscape. Several clusters of kettle lakes and hummocky terrain formed from sediment deposited on stagnant ice add

additional character to this young glacial landscape. Swarms of drumlins formed by the most recent glacial advance on top of the hills sculpted by the meltwater streams east of the Elderon Moraines in Waupaca County add to the east-west "grain" of the landscape.

The Ice Age Trail corridor is located along the border between Portage and Waupaca Counties, often including terrain in both counties. The Trail corridor ranges in width from 1-6 miles, including several of the Elderon Moraines and outwash features on the west and drumlins and other features typically formed under the glacier to the east. The Ice Age Trail corridor has been located here because of the outstanding examples of features formed in front of, at the edge of, and underneath a glacier that had both actively advancing and stagnant portions.

Glaciers are commonly likened to conveyor belts because they continually pull rock debris and soil out of the ground and carry them along to their edges. As the edge of the glacier melts this debris is released, accumulating in a prominent ridge where the glacial margin remains in the same place for some time or spreading more uniformly across the land where the ice is rapidly melting back. These ridges of unsorted sand, gravel, rocks and boulders that have fallen directly out of the melting ice are called moraines. The material is called till. Moraines deposited by rapidly melting glaciers are often cut by raging meltwater streams into discontinuous segments. Sand and gravel stratified by these meltwater streams frequently fill the gaps in the moraines cut by the meltwater. The Elderon Moraines are examples of this type of discontinuous moraine interspersed with layered water-deposited sediments.

As glaciers waste or decay, frequently large masses of ice become totally stagnant and isolated from the moving mass of ice. These areas of stagnant ice foster the formation of several types of glacial features and terrain that is very rough, irregular and hummocky. Often, either actively moving glacial ice will ride over these masses of stagnant ice and bury them with unsorted sand, gravel and rocks or meltwater flowing from the nearby glacier will bury them with stratified layers of sediment. In areas where the streams fall down through shafts in the decaying ice they will frequently deposit layers of sand and gravel forming steep, conical hills, called kames. The debris covering the stagnant ice mass accumulates as more rocks tumble off the moving glacier and as more sediment is deposited by meltwater flowing over the mass. As the buried ice gradually melts the debris cover slumps down to fill the space left by the waning ice. The result is a very irregular, hummocky terrain, usually comprised of many small steep-sided hills where the buried ice was thin and deep depressions or kettles where the buried ice was thicker. In areas of sediment rich in clay the kettles will hold water forming kettle ponds or lakes bordered by steep hills.

Several fine and scenic examples of hummocky, stagnant ice terrain with clusters of kettle ponds and lakes have been included in the Ice Age Trail Corridor. One of these, containing half a dozen lakes and ponds, extends from Sunset Lake and the Central Wisconsin Environmental Station in the Town of New Hope eastward to the Iola Winter Sports Area in the Town of Iola. Another hummocky, stagnant ice terrain includes Foster, Skunk and

several other lakes in the Town of Scandinavia.

As glaciers creep across the land they shape and sculpt the surface both by plucking and depositing material. This erosion and deposition is not uniform, but rather usually results in an undulating landsurface of swells and swales that are aligned along the course of the glacier's flow. The most distinctive landform resulting from this process of differential erosion and deposition is the drumlin. Typically found in groups or "swarms", drumlins are streamlined hills, elongated by the glacier in the direction of the ice flow. Several outstanding swarms of several dozen drumlins are included within the Ice Age Trail Corridor in the Town of Farmington.

As glaciers melt, debris is carried away from them by rapidly flowing streams. These streams are usually so filled with debris that they spread out in a number of intertwined or braided channels and deposit stratified layers of fine sand, cobbles and larger boulders, eventually forming plains of this outwash material. Frequently ice blocks from the wasting glaciers float along in these streams and stop somewhere on the outwash only to be buried by more sediment. When these ice blocks melt, pits or depressions called kettles are formed in the otherwise flat outwash plains. These plains are called pitted outwash plains. Ponds and marshes frequently form in the pits where the sediment contains much clay as a barrier to water flow. A good example of a pitted outwash plain is found in the southwest part of the Town of Alban.

Carved through the glacially deposited and sculpted landscape are several deep, winding river channels. The largest of these channels cuts north and south through the Towns of Scandinavia and Farmington just east of the Elderon Moraines. River channels much larger than the streams that currently occupy them were cut by the raging torrents of water released as the Late Wisconsin glacier melted away. The moraines of eastern Portage and western Waupaca Counties are perforated in many places by meltwater channels cut by westward flowing streams. Some of these streams flowed for some distance beneath the glacier and cut channels that were later mostly filled with glacial debris. As the glacier finally melted back into central Waupaca County a large meltwater river flowed southward between the glacier's edge and the easternmost of the Elderon Moraines cutting the deep channel through Scandinavia and Farmington.

Soils

During the Wisconsin glacial advance, the western half of Waupaca County and the eastern half of Portage County, (where the Ice Age NST corridor is located), were covered by Cary ground moraine and Cary end moraine. The moraines are composed of materials derived from bedrock deposits found to the north and east of the area and relocated by glacial action. Soils found in this area are largely derived from the weathering of these glacial deposits. Boulders of granite rock are also common on the surface. They are presumed to have originated from the Wolf River Batholith. Both Portage and Waupaca Counties are underlain

by Precambrian granite and Cambrian Sandstone.

Reflecting their glacial origins, the predominate soil types in the Ice Age NST corridor are sandy loams and loamy sands. According to the United States Department of Agriculture's Soil Survey of Portage and Waupaca Counties, they compose approximately 90 percent of the soil associations. A soil association is a landscape that has a distinctive proportion pattern of soils. It is typically named for the major soil even though it may contain other "minor" soil types.

The border between Portage and Waupaca Counties forms the interface where end moraines and ground moraines merge. In Portage County two soil associations that dominate the corridor are Wyocena-Rosholt and Kranski-Coloma-Mecan. They are derived from sandy glacial till. Wyocena-Rosholt is found in the northeast to central; Kranski-Coloma-Mecan is found in the southeast.

Wyocena-Rosholt association composes the western face of the Elderon end moraine through the townships of Alban, New Hope, Amherst, and Lanark. It is characterized by gently to steeply sloping hills and plains mottled with drainageways and depressions. Wyocena soils are moderate to well drained sandy loams found on the hills of the end moraine. Stones, at times, cover large areas of the soil surface. On the adjoining outwash plains is Rosholt, a moderately deep sandy loam soil underlain by sand and gravel. Both soils have moderate permeability. This soil association is typically used for cropland, pasture or woodlots. On severe slopes it is subject to water and wind erosion.

Kranski-Coloma-Mecan association is also found in areas of glacial drift in the town of Belmont. However, this association is sandier and drains more excessively than Wyocena-Rosholt. These soils vary from deep to moderately deep loamy sands to sandy loams. The landscape varies from slightly sloping to steeply sloping and is primarily used for pasture and woodlot. Less sloping areas may be used for cropland. However, because of high sand content, this association may be subject to water and wind erosion and drought.

Two landscape associations cover the Waupaca County portion of the trail corridor. Kennan-Rosholt association covers the north to central portion of the corridor in the townships of Iola, Scandinavia, and Farmington. This association is characterized by nearly level to steep, well drained loamy soil that is composed of drumlins (Kennan), outwash plains and stream terraces (Rosholt). Both soils can be slightly to steeply sloping and are primarily sandy loam. However, Kennan is underlain with a loamy sand while Rosholt's substratum is a stratified sand and gravel. Kennan's surface is frequently covered with boulders limiting development. Hilly topography is managed for woodlands, pasture, and wildlife habitat. Level areas are cultivated for corn, oats, alfalfa and at times irrigated for potatoes. Erosion control from blowing soil can be a problem.

Plainfield-Richford-Kranski Association is found in the Township of Dayton. This association is characterized by nearly level to steep, moderately to excessively well drained

sandy soils. Plainfield soil is found on moraine and outwash plains, Kranski on moraines, and Richford soils on outwash plains and stream terraces. This association is low in water capacity, natural fertility, and organic matter. All of the soils are utilized for tree production. Richford and Kranski soils may also be used for crop production such as corn, small grains and hay. This association's primary limitations are erosion caused by blowing soil and loss of organic matter.

Both counties contain organic and other poorly drained soils that are found in depressions, drainageways and floodplains of active streams and rivers. Cathro-Markey-Seelyville association is the major organic or muck soils found in depressions on moraines, glacial lake basins, outwash plains, and flood plains. Subject to flooding or standing water they occupy the lowest areas on the landscape. Uses are limited to native vegetation since agricultural crops are subject to water damage and killing frosts. In select areas, soils may be drained for corn silage. This association is found in a large area surrounding the Flume Creek.

Frequently located adjacent to Cathro-Markey-Seelyville association are the Oesterle and Roscommon soils. They are sandy loam soils found in broad level depressions, drainageways, and adjacent to ponds and lakes. Both soils can be found along the Little Wolf River, Lake Helen, Nace Creek, and Murray Creek. Pasture or woodland are common land uses.

Water Resources

The proposed Ice Age Trail for Portage and Waupaca counties is located within the Wolf River Basin. This major drainage basin covers over 2,600 square miles and is one of the main contributors to the Fox River. Surface waters within the project area have relatively high overall quality and provide a good sport fishery. Lake levels and stream base flow are directly related to local groundwater supplies. Most of the groundwater is found near the surface as a result of a thin soil mantle over bedrock. This region contains many springs and seeps. Depending on the rate of discharge and local topography, groundwater finds its way to the surface by flowing into streams or it may accumulate in a pond or marsh. Groundwater seepage is largely responsible for the abundance of trout streams in the project area.

Threats to the surface water and groundwater quality include soil erosion due to land development and agricultural practices, contamination from pesticide over use in permeable soils, supply depletion from over-irrigation, and various other point and non-point sources. Loss of wetlands due to development activities also threatens the water system. A number of basin and watershed management plans and best management practices are in place, however, to help safeguard these valuable resources.

Climate and Air Quality

The climate of the area is typical continental, having four distinct seasons. Winters are cold and snowy; summers are usually warm and humid. A succession of high and low pressure systems passing over the region, from west to east, brings variety to the weather throughout the year. Significant weather changes can be expected every few days, especially during the winter and spring months. July, with an average temperature of 72 degrees Fahrenheit (F) is the warmest month; January is the coldest with an average temperature of 16.5 degrees F. The growing season is about 143 days in length and runs from May through September. Average precipitation for Waupaca County is 30.25 inches and 31.4 inches for Portage County.

Ambient air quality is generally good and could be characterized in rural areas as "fresh country air". For the most part, ozone is not an air quality concern in this area. Threats to air quality could arise from paper mills, foundries, or other manufacturing or processing plants in the study area. Airborne dust mobilized by plowing or the wind erosion of bare soil in agricultural fields may sometimes be a chronic problem.

B. Biological Resources

Flora

The vegetative cover of the two-county area is divided mainly between agricultural fields and forests. Forest accounts for 355,400 acres, 36 percent of the study area. Approximately 8500 acres are devoted to private forest, 346,900 acres to commercial forest (1983 USDA Wisconsin Forest Statistics). The forest types include northern deciduous forests interspersed with occasional evergreen covertypes. Forest tree species include: oaks, maples, occasional paper birch, white pine, red pine, spruce species, aspen and various other hardwood and conifer species. Other vegetative communities, excluding agricultural crops, include oak savanna, prairie, and wetlands.

Wildlife

Wildlife is abundant in the study area. Extensive forest lands, agricultural lands and wetlands provide habitat, cover and food source for many species, both game and non-game. Wildlife which inhabit Portage and Waupaca Counties in the area of the Ice Age Trail include white tail deer, grey squirrel, fox, squirrel, cottontail rabbit, coyote, fox, weasel, ruffed grouse, woodcock, song birds---including numerous neotropical migrant species, wild turkey, and numerous reptilian and amphibian species.

Fisheries

The waters of the study area contain a variety of cold and warm-water fish species. Warm-water species such as bass, panfish and carp are found in the lakes, ponds and slow moving streams of the area. Cold water species such as brook trout, brown trout, and rainbow trout are generally found in the deep spring-fed lakes and faster flowing streams with a temperature of less than 75 degree F.

There are numerous Class I trout streams in the area of the Ice Age Trail. These include the Little Wolf River, Bradley Creek, Flume Creek, Trout (Nace) Creek, Sannes Creek, Murray Creek and Pearl Creek. Class I trout streams are those which have completely natural reproduction and do not need supplemental stocking to sustain a viable trout fishery. These are all highly valuable streams with good water quality.

Threatened and Endangered Resources

Two state natural areas (SNA) are found within the proposed trail corridor. They are New Hope Pines SNA located in the town of New Hope, and Pope Lake SNA in Hartman Creek State Park. Additional information can be found on both SNAs in Attachment 1--Natural Area Information.

Skunk-Foster Lakes is a third natural area that is not owned but is recognized by the state for its significance. It is located in Waupaca County in the town of Scandinavia.

State threatened, endangered, or special concern species found within one mile of the corridor include the Karner blue butterfly, barn owl, red-shouldered hawk, wood turtle, Blanding's turtle, marsh valerian, and dragon's mouth.

Federally-listed threatened and endangered species present in Portage and Waupaca Counties are the Bald Eagle, Fassett's locoweed, and the Karner Blue butterfly.

C. Cultural Resources

Archeological investigations have shown that Native Americans have inhabited eastern Portage and western Waupaca counties since the Pleistocene Epoch, approximately 15,000 years ago. Since that time, their cultures have evolved in order to adapt to the rapid climatic changes that were occurring. Today we recognize three distinct cultures that spanned the period from glaciation to the present---Paleoindian Cultural Tradition, 10,000-6,000 B.C.; Archaic Cultural Tradition, 6,000-500 B.C.; and Woodland Cultural Tradition, 500 B.C. to European Contact.

Paleoindians were people who lived with conditions controlled by the glacier. Many of their archeological sites are found on features that are the result of Pleistocene activities linked with cold periods (stadials) and warm periods (interstadial) such as dunes and braided meltwater streams. As evidenced by their campsites, they had a nomadic lifestyle hunting mastodon, mammoth, and herds of caribou. The flora they lived with varied depending on its closeness to the glacier. Tundra (grasses, sedges, willows) was located directly on the glacier which covered most of Waupaca County. Moving west into Portage County, away from the ice sheet, boreal forest (pine, spruce, hemlock) predominated.

When the environment warmed there was an increase of rivers and streams, wetlands, and lakes in both counties attracting a diversity of wildlife and plantlife. Lying within the "Tension Zone", both counties found themselves at a junction between three biotic provinces: Illinoian, Carolinian, and Canadian. Their flora and fauna are characterized by prairie, oak-hickory, and boreal forest respectively. This resulting habitat provided a very rich resource base for a growing human population adapting to the Archaic environment. Throughout the Archaic and Woodland times and continuing into the present, the environment in Portage and Waupaca Counties has remained unchanged.

Surrounded by a wealth of foodsources, the Archaic Indians lived a more sedentary lifestyle than their predecessors. Their sites are often identified by refuse piles and artifacts reflective of a technology based on fishing, clamming, and trapping. Toward the end of the Archaic, plants and seeds increasingly became their focus. This is reflected in archeological deposits which contained grinding stones that were used to process plant parts, particularly nuts.

By 500 B.C. the Woodland tradition became prevalent. Archeologists separate Woodland Indians from their earlier ancestors by identifying them with the pottery, cultivated crops and constructed earthworks including burial mounds. By 1650 A.D. historic tribes--Winnebago, Sauk, Potowotomi, Fox, Menomoni--occupied this area.

Scattered areas within the corridor have been surveyed and mapped by the University of Wisconsin--Steven Point, Department of Anthropology. Paleoindian and Archaic sites are found near Waupaca. Woodland features such as burial mounds are found near Sunset Lake, Rollofson Lake and Hartman Creek State Park. Burial mounds are frequently placed near water on well drained sites. All of the mounds are protected under the Wisconsin burial site preservation law (s.157.79 Wis. Stats.). The entire project area has yet to be inventoried for archeologic resources. Given the areas rich historic past, it can be assumed that there are many more prehistoric and historic sites in the corridor than are presently known or recorded.

European-Americans also left their mark on the landscape with the influx of immigrants into Portage and Waupaca Counties in the mid-1800's. These immigrants were composed primarily of Norwegians, Danes, and Swiss as well as Polish, Germans, English, and Yankees. They came to the area to farm or lumber. Culturally significant, European-American sites scattered throughout the trail corridor include churches, schools, mills,

homesteads as well as picturesque fence row boulders from early land clearing. The settlers also named natural features after their families such as Minister Lake.

For Portage County, the State Historical Society lists a few potential National Register Sites. They include Pipe School, a one room school house in the town of Lanark, and the Otto Lawrence House, a Greek Revival. Two Lutheran Churches--North New Hope and South New Hope--are located adjacent to and within one mile of the corridor.

The corridor in Waupaca County encompasses a number of interesting historic features. A relocated Log House built in 1860 is located just south of U.S. Highway 10 along Foley Road, the Waupaca River, and the existing trail. South of the Log House is Cobbtown, today a ghost town but historically significant to the area. Cobbtown originated in the 1850's when a saw mill was established on the site. Ten years later a flour mill was built that ground corn for breakfast cereal. The corn cobs used to be stacked up to the eaves, hence the name, "Cobbtown." Cobbtown became home to a millinery shop, post office, grocery store, cheese factory, blacksmith shop, and the Little Red School. Today, all that remains are the Little Red School and a dwelling which are both private homes. Also passing through this area, and crossing the Ice Age Trail, is an historic Indian trail used as a trading route for large Indian villages located in the Chain-O-Lakes area. Following the existing trail south is Hartman Creek State Park which was originally a private then public fish hatchery in the 1930's. Located within the park is the route of an old stagecoach route between Oshkosh and Stevens Point, today called Coach Road Trail.

D. Socio-economic Resources

The top employment industries in 1990 for Waupaca County were manufacturing (31%), services (25%), retail (16%), and agriculture/forestry/fishing (9%). Since 1980, agriculture/forestry/fishery industries have experienced a decrease in employment but an increase in earnings. The industry experiencing the strongest growth between 1980 and 1990 was the service sector; recreation/tourism sectors also showed a respectable increase.

Portage County's leading employers are retail (21%), manufacturing (20%), services (16.5%) and government (15%). Growth in the 1990's is expected in the manufacturing and service sectors with the expansion of large corporations in Stevens Point. Farming, forestry, and fishing compose 3 percent of the workforce. Tourism is not a strong influence in Portage County's economy although it is gradually increasing.

Generally, socio-economic and population growth for Portage and Waupaca Counties have been at a slower rate than the rest of the state, but have nevertheless increased steadily. Farms have decreased in numbers but increased in size, and both counties have experienced a decrease in their unemployment rates. However, within the proposed Ice Age Trail corridor there are areas where socio-economic and population growth has been much more dramatic.

The proposed Ice Age NST corridor is located in a picturesque, rural region which contains an abundance of lakes and public lands. For years this area has been a magnet for secondary lakefront home development as well as a favorite vacation spot. Due to its attractiveness, people are increasingly making this area their permanent home. According to population projections for 1990-2020, Dayton and Farmington will experience the most significant growth with rates of 52.20 percent and 28.64 percent respectively. Other communities adjacent to the Ice Age Trail corridor have already seen an increase in their populations.

Population Trends within or adjacent to Ice Age Trail corridor

Portage County

<u>Community</u>	<u>1980 Population</u>	<u>1990 Population</u>	<u>% Changed</u>
Alban	768	860	+11.97%
Amherst	1,215	1,335	+ 9.87%
Belmont	496	540	+ 8.87%
Lanark	1,043	1,154	+10.64%
New Hope	625	694	+11.04%

Source: Demographics Service Center, Wisconsin Department of Administration, 1993.

*Percent Change between 1980 to Projected 1995 Populations goes up an additional 4-8% then what is represented on graph depending on township.

Waupaca County

<u>Community</u>	<u>1980 Population</u>	<u>1992 Population</u>	<u>% Changed</u>
Waupaca	4,472	5,185	+15.94%
Iola	957	1,165	+21.73%
Scandinavia	292	300	+ 2.74%
Farmington	2,959	3,704	+25.18%
Dayton	1,514	2,087	+37.85%

Source: U.S. Census 1980. Official Population Estimates, Wisconsin Department of Administration.

This increase in population is attributable to people moving into the area versus birth rates. The location of this population growth reflects a national trend where an increasing percentage of the population is locating in villages, small cities and rural areas. Also an increasing percentage of new residential developments are occurring in townships outside of these villages and small cities. Families are looking to this area for a better quality of life and the elderly are looking for a desirable place to retire. In fact, between 1990-2020, the elderly population is expected to increase in Waupaca County by 31 percent. These influences will likely contribute to the increase of land values and development within the corridor. They will also create a greater need to protect significant natural resource features as well as provide additional areas for individuals to recreate.

Regardless of trends, communities located adjacent to the proposed Ice Age NST corridor such as Waupaca, Scandinavia, Amherst Junction, Iola, Farmington, and Dayton may benefit economically from trail users by providing support opportunities like grocery stores, restaurants, and bed and breakfasts.

Land Use

Primary land uses within the proposed Ice Age NST corridor are agriculture and forestry. However, both population and development have and are continuing to increase.

Estimated Existing Land Use in the Proposed Portage/Waupaca Ice Age Trail Corridor

LAND USE CATEGORIES	% of Total
Agriculture	31.0
Forest	35.0
Grassland/Brushland/Undeveloped Open Space	6.5
Public Owned Lands	12.0
Residential	2.0
Streams/Lakes/Wetlands	13.5
Commercial	---
Industrial	---
TOTAL	100

Source: 1993 Aerial Photos and USGS maps

The Ice Age NST is a permitted use in all zoning classification (ss. 236.292 Wis. stats.).

Economic Resources

The costs for acquiring 55 miles of trail through Portage and Waupaca Counties would vary, depending on the width of the actual trailway and the length of trail routed on land already under public ownership. Currently 20 miles of trail has been established in Waupaca and Portage Counties. Of these established miles approximately 5 miles are currently developed on public lands. Potentially an additional 5 miles of trail could be built on other sections of public lands. If the trail took advantage of all these sections of public lands, it would be necessary to acquire only a 45-mile trailway.

In 1996, the average cost of purchasing a 40-acre piece of farmland in Portage and Waupaca Counties varies from \$650 to \$1000 per acre, depending on land characteristics such as timber, streams, views, wetlands, etc. Because of the desirability of this area, cost per acre is increasing every year. Since the majority of land that the Ice Age Trail corridor encompasses is uplands, the average cost per acre would probably be on the higher side of this scale. Therefore, to approximate the cost of acquiring a 45-mile trailway with a width of 200, 500 or 1000 feet, an average cost of \$900 per acre is used in the following table. Realistically, the trailway will be a variety of widths depending on features, land-use, and landowner desires.

Trailway Width	Total Acreage- 45-mile Corridor	Projected Costs- 45-mile Corridor
200 feet	1091	\$981,900
500 feet	2727	\$2,454,300
1000 feet	5455	\$4,909,500

The majority of trail built in Portage and Waupaca County will be a simple brushed trail through grasses and trees. Aside from the cost of tools, the labor will be provided by volunteers from the Ice Age Park and Trail Foundation. There will be steep or wet areas that the trail will cross requiring sidehill construction or surfacing such as puncheon, turnpike or boardwalk. Since the exact location for the trail at this time is unknown, it is difficult to provide exact costs for these situations.

Regardless of where the trail is located it will have approximately 7-8 stream crossings. The estimated costs of building hiking bridges with handrails varies from \$100 to \$200 per linear foot, depending on materials and length. Costs could rise if the bridge is required to support maintenance vehicles. Presuming the trail will require 8 bridges that average 25 feet in length, the cost would range from \$20,000 to \$40,000.

Parking is currently available at the State Fishery Areas, State Park, 2 County Parks, and Iola Sports Complex. However, as additional trail is developed and trail use increases, new parking lots may be desirable to meet this changing demand. The estimated costs for developing unpaved parking lots are \$170 per car. It is anticipated that an additional 4-5 parking lots (accommodating 4-6 cars per lot) will be needed. Costs for these lots could range from \$2720 to \$5100. Simple information kiosks may be located at these new lots as well as existing trailheads. They cost between \$500-\$1500 a piece, depending on their size and the material used. *(All of these costs are indexed to 1996 figures and can be expected to increase over time.)